

# Avery Weigh-Tronix

PLATINUM DISTRIBUTOR



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# FLSC-05 FORKLIFT SCALE SYSTEM

Technical Specification



## DESCRIPTION

### General

The Avery Weigh-Tronix FLSC Forklift Scale System is a, legal-for-trade weighing solution. The system includes a durable, front-mounted digital scale carriage with Weigh Bar® electronic weight sensors and “clear-view” open center area. The system allows operators to easily and quickly capture legal-for-trade weight data en route, without extra steps.

### Seamless Compatibility

Simply attach the FLSC 5000 lb scale carriage to an existing Class II cleat-type forklift carriage and mount the FLI 225 or ZM710 indicator in a convenient driver location. This system allows seamless integration of weighing and data management into your operations without adding any extra steps or route changes.

### Robust Design

The forklift scale carriage is comprised of two metal plates coupled together by four high capacity Weigh Bars.

- › Front loading safety factor of 29.5:1
- › Normal load safety factor of 7.5:1
- › 300% overload protection with no damage

The instrumentation is designed exclusively for the forklift vehicle. It incorporates design technologies to withstand the environmental and warehouse jolts common in forklift applications.

### Highly Accurate

The Avery Weigh-Tronix FLSC system monitors the orientation of the scale and maintains accurate weight readings even if the forklift is on unlevel ground, the mast is tilted, or the pallet load is off-center. The forklift drivers are not required to jockey the mast or the position of the load on the scale.

The accurate weighing performance of the FLSC has been validated by NCWM (National Conference on Weights and Measures) to weigh legal for trade with max 72” forks even when tilted:

- › 3 degrees side to side (5% grade)
- › 5 degrees back (8% grade)
- › 7 degrees forward (12% grade)

This electronic scale design has no mechanical flexures or springs to influence the weighing performance.

### Data Management

The FLI 225 Indicator provides a simple, no-nonsense solution through classic or enhanced operation for capturing weight and supplying it to a peripheral device.

The ZM710 instrument simultaneously displays multiple fields of data, assisting the operator with a visual reference. Data can be stored on board up to 10,000 records instantly transmitted wirelessly to a local or global network.

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## SCALE CARRIAGE

Front and Back Plates Yield Strength	43,500 psi
Weigh Bar® Fasteners Yield Strength	160,000 psi
Weigh Bar Tensioners Yield Strength	150,000 psi
Mounting Hooks Yield Strength	43,500 psi
Scale Spring Loaded Centering Pin Yield Strength	89,000 psi
Safety Factors	29.5:1 front loading, 7.5:1 normal loading, 300% no damage overloading
View Port	Continuous 6" x 20 3/4" nominal
Weight Sensors	Four Avery Weigh-Tronix 2500 LB Weigh Bars direct coupled, no flexures
Weight Summing	Digital assembly encapsulated
Cover Plates	Weigh Bar cabling protection
Wired Interface	Coiled cable extending to 20'
Wireless Cable Interface	Optional
Finish	High grade powder paint

## WEIGH BAR

Type	LTT 2.5k weight sensors (4) NTEP CC# 95-093
Metal Properties	AISI 4340 steel yield strength 140,000 psi
Zero Balance	± 0.10 mv/v
Non-Linearity Maximum	0.3% of rated output
Hysteresis Maximum	0.03% of rated output
Temperature Effect on Output	± 0.0025% °C of rated output (-10 to +40° C)
Temperature Effect on Zero Balance	± 1.70 x 10 <sup>-7</sup> volts per volt 5°C (-10 to +40° C)
Safe Overload Rating	150% of capacity

## DIGITAL WEIGHT SUMMING AND ANGLE DETECTION ASSEMBLY

Approvals	FLJ 100 digital junction box NTEP CC# 06-096
Accuracy	Class III
Enclosure	Metal enclosure, circuitry encapsulated
Environment	Legal 14° to 104° F (-10° to +40° C), industrial -40° to +65° C
Angle Sensors	0.1 degree accuracy from 0-10 degrees
Angle Sensor Temperature Coefficient	0.008%/° C
Option	FLW 100 wireless communications with scale carriage battery and instrument receiver, (battery life: continuously active 80 hours, active 8 hours/day 10 days before recharging, only 6.5 hours for total recharge, external battery charger)

## SYSTEM

Lifting Capacity	Reduced 12-14%
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## FLSC APPROVALS

NCWM Certificate of Conformance 07-028 Accuracy Class III, 5000 x 5 LB Legal for Trade, fork length 72" max Compatible with ITA Class II, 16" high cleat type carriage	FCC part 15B CE
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## FLI 225 AND ZM710 INSTRUMENTS

<b>Approvals</b>	FLI 225 - NTEP CC# 07-091, category 3 ZM710 - NTEP CC# 20-033, category 3
<b>Power Input</b>	FLI 225 - 9 to 36 vdc, 3.5 Amp, inactive stand by mode ZM710 - M12 connector, 12 to 36 vdc, 2.5 Amp, inactive standby mode
<b>Display</b>	FLI 225 - High contrast backlit transreflective LCD dot matrix. Custom designed font ¾" high digits. Classic, Classic with Accumulation and Expanded Modes ZM710 - 7" backlit multi colored touch screen TFT LCD display, 800 x 480 resolution.
<b>Operational Keys</b>	FLI 225 - On/Off, Zero, Print, Select, Tare, F1-F4 ZM710 - Hard keys F1, Select, Zero, Print, Units, Tare, On/Off, many onscreen touch activated keys
<b>Operational Images</b>	FLI 225 - Weight, LB/KG, Motion, Center of Zero, Weigh mode, Wireless carriage communication status, Operator status messages and Battery status of FLW 100 ZM710 - Weight, LB/KG, Weigh mode, Motion, Center of Zero, Date/Time, Number of stored records, Pro Number, Actual Pieces, Accumulated Pieces, Employee ID, Accumulated Weight, Abort, Complete, Alpha Numeric entry screen, wireless carriage status, wireless scale carriage battery status, and multiple user messages including diagnostic management with predictive alerts
<b>Operating System</b>	ZM710 - Microsoft Windows® 10 IoT Enterprise 2019
<b>Angle Compensation</b>	Detects and automatically compensates for out of level weighing conditions
<b>Communication Ports</b>	FLI 225 - Two RS232 serial ports ZM710 - Four M12 Connections-Two RS232 (one is used as scale port), Ethernet, USB, Wireless Network (802.11b/g/n 2.4GHz).
<b>Operating Environment</b>	FLI 225- Legal 14° to 104° F (-10° to +40° C), industrial -20° to +60° C ZM710- Legal 14° to 104° F (-10° to +40° C), industrial -20° to +60° C
<b>Audio</b>	ZM710 - Internal speaker
<b>Enclosure</b>	FLI 225 - Composite with tilt and swivel brackets, designed to IP65 ZM710 - Aluminum front bezel and plastic back cover with aluminum heat sink. Designed to IP65.
<b>Dimension</b>	FLI 225 - 8.14"W x 5.19"H x 4.03"D includes mounting bracket ZM710 - 9.44"W x 7.08"H x 2.32"D, not including mounting
<b>ZM710 Mounting</b>	ZM710 - VESA mount 75 mm x 75 mm or 100 mm x 100 mm
<b>Weight</b>	FLI 225 - 4 LB / 1.8 KG ZM710 - 4.62 LB/ 2.1 KG
<b>Options</b>	FLI 225 - FLP 100 power conditioner 24 to 72 vdc, FLW 100 wireless instrument to scale, barcode scanner, RM 100 bt (2.0), RM-310 wireless networking (802.11 a/b/g/n) ZM710 - FLP 100 power conditioner 24 to 72 vdc, FLW 100 wireless instrument to scale, barcode scanner, forklift RAM mount kit

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